

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

Claim 1 (currently amended): A method for estimating an amount of angular disagreement of planes of polarization between two polarization-maintaining optical fibers in which at least one of the polarization-maintaining optical fibers has a pair of stress applying sections, and comprising steps of:

irradiating a light on the lateral side of said polarization-maintaining optical fibers during a connection of said polarization-maintaining optical fibers, and

estimating the amount of angular disagreement of the plane of polarization of the polarization-maintaining optical fiber having said stress applying sections from a function of which uses positions and heights of two peaks of brightness as variable quantities corresponding to the stress applying sections of a transmitted light produced by irradiating said light.

Claim 2 (currently amended): A method for estimating an amount of angular disagreement of planes of polarization between two polarization-maintaining optical fibers in which at least one of the polarization-maintaining optical fibers has a pair of stress applying sections, and comprising steps of:

irradiating a light on the lateral side of said polarization-maintaining optical fibers after a connection of said polarization-maintaining optical fibers, and

estimating the amount of angular disagreement of the plane of polarization of the polarization-maintaining optical fiber having said stress applying sections from a function of which uses positions and heights of two peaks of brightness as variable quantities corresponding to the stress applying sections of a transmitted light produced by irradiating said light.

Claim 3 (previously presented): A method for connecting two polarization-maintaining optical fibers without angular disagreement, comprising steps of estimating an amount of angular disagreement of planes of polarization between two polarization-maintaining optical fibers by

using the method for estimating the amount of angular disagreement of planes of polarization between two polarization-maintaining optical fibers according to claim 1, and of connecting two polarization-maintaining optical fibers to comply with an estimated amount of angular disagreement of the planes of polarization of the optical fibers.

Claim 4 (canceled)

Claim 5 (previously presented): A method for connecting two polarization-maintaining optical fibers with predetermined angular disagreement, comprising steps of estimating an amount of angular disagreement of planes of polarization between two polarization-maintaining optical fibers by using the method for estimating the amount of angular disagreement of planes of polarization between two polarization-maintaining optical fibers according to claim 1, and of connecting two polarization-maintaining optical fibers to comply with an estimated amount of angular disagreement of the planes of polarization of the optical fibers.

Claim 6 (canceled)